

AECOM Room 2045, Building 19 NASA Ames Research Center Moffett Field, CA 94035-1000 aecom.com

## **Memorandum**

To: Jonathan Ikan, Cultural Resources Manager, NASA Ames Research Center

CC: John Olson Baywest, LLC johno@baywest.com

**Subject:** Section 106 Consultation on Building 55 Pipeline Excavation Project, NASA Ames Research

Center, Moffett Field, Santa Clara County, California

From: Trina Meiser, Senior Architectural Historian

Jennifer Redmond, RPA, Senior Archaeologist

**Date:** March 2, 2022

### 1. Introduction

The U.S. Navy and the National Aeronautics and Space Administration (NASA) Ames Research Center (ARC) proposes the Building 55 Pipeline Excavation Project (project or undertaking) at ARC, Moffett Field, Santa Clara County, California. NASA is the lead federal agency responsible for compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (54 United States Code 300101 et seq.), which requires federal agencies to take into account the effects of their activities and programs on historic properties, and its implementing regulations in 36 Code of Federal Regulations (CFR) Part 800. The purpose of this memorandum is to provide necessary information for compliance with Section 106, including a description of the undertaking and the Area of Potential Effects (APE), the methodology used to identify and evaluate historic properties within the APE, a description of the affected historic properties, and an assessment of potential effects resulting from the undertaking.

### 1.1 Project Location

The project area is located at Moffett Federal Airfield (MFA) near Hangar 2 and Hangar 3 on the east side of the airfield (Appendix A, Figures 1 and 2). The project area is within the boundary of the U.S. Naval Air Station (NAS) Sunnyvale, California Historic District, which is listed in the National Register of Historic Places (NRHP).

### 1.2 Project Personnel

This study was conducted by cultural resources professionals who meet the Secretary of the Interior's Professional Qualifications Standards (48 Federal Register 44738). Trina Meiser, M.A., Senior Architectural Historian, served as the Principal Investigator; Jennifer Redmond, M.A., RPA, addressed archaeological resources; Tim Wolfe provided map figures; and Kirsten Johnson, M.A., served as the lead verifier of this document.

## 2. Description of the Undertaking

The project involves remedial activities to address environmental impacts associated with a release from the former Building 55 petroleum pipeline at the former NAS Moffett Field. In 2018, petroleum hydrocarbons were discovered in soil and groundwater near the southeast corner of Hangar 2. The remedial activities include soil excavation and groundwater sampling to address petroleum constituents at a former Navy pipeline. The objective of the remedial action is to conduct secondary source removal through 1) limited excavation, transportation, and off-site disposal of petroleum-impacted soil; 2) additional secondary source removal through application of a combined remedy technology; and 3) installation of five groundwater monitoring wells for one year of quarterly performance monitoring.

Due to the presence of a shallow groundwater table and soft clays at approximately 5' below ground surface (bgs), as well as the presence of underground utilities in the area (including a natural gas line), soil excavation will be limited to a depth of 5' bgs and conducted as a removal of a series of "cells."

The project activities would include:

- 1. A pre-work inspection and concrete cutting/demolition;
- 2. a geophysical survey and exposure of any underground utilities by hand-digging;
- 3. excavation of impacted soil to 5' bgs, to the extent practicable, from the first pre-delineated cell;
- 4. application of Klozur® CR to the resulting excavation floor through bucket (or paddle) mixing for additional treatment of residual petroleum impacts in soil and groundwater;
- 5. backfill of the excavation with clean compacted fill material;
- 6. repeating the excavation, amendment application, and backfill activities (steps 3, 4, and 5) at each cell;
- 7. completion of a survey of the excavated areas;
- 8. installation, development, and sample of five new 14 to 14.5' deep, 2' diameter groundwater monitoring wells for post-treatment performance monitoring;
- 9. characterization, transport, and off-site disposal of the excavated soil; and
- 10. restoration of site surface conditions and a post-work inspection.

Appendix B includes select project drawings, including a proposed excavation and groundwater monitoring well locations.

### 3. Area of Potential Effects

The APE is defined to address both direct and indirect impacts on historic properties. The APE encompasses areas that may be affected by both temporary and permanent construction activities. Below-grade activities are limited to the excavation areas for the project with a vertical APE of 5' maximum depth to access utilities and remove soil, and groundwater monitoring well installation with a vertical APE of a 14.5' maximum depth. Due to the scale and nature of the remedial activities, visual and atmospheric impacts resulting from the excavation pose no potential to affect adjacent historic properties; therefore, the APE only includes the excavation and restoration footprint (see Appendix A; Figure 3).

## 4. Identification of Historic Properties

Historic properties are defined as any district, site, building, structure, or object that is included in or is eligible for listing in the NRHP. The following sections address the methodology and efforts to identify historic properties in the APE.

## 4.1 Archaeological Resources

The land that comprises ARC has changed dramatically since the early twentieth century from predominantly agricultural use to an extensive military airfield installation beginning in 1931 and aeronautical research and development beginning in 1939. Extensive surface disturbance occurred throughout ARC with grading and fill to create the airfield and the campuses with hundreds of buildings and structures to support operations.

A comprehensive evaluation of the archaeological and geoarchaeological sensitivity of ARC was completed in 2017 (AECOM 2017). This investigation involved a desktop survey of archival resources, including a records search at the Northwest Information Center of the California Historical Resources Information System, which is the official repository of archaeological data for Santa Clara County; a search of the Sacred Lands File held by the California Native American Heritage Commission; and a geoarchaeological assessment of the entire ARC.

The records search identified that much of the ARC had been previously surveyed and no new archaeological sites had been identified within its boundaries since the early twentieth century, though some areas of near-surface historical and prehistoric archaeological sensitivity were identified based on the locations of documented archaeological sites and features on historical maps. The geoarchaeological assessment, which included a review of soils maps and prior geoarchaeological studies in the vicinity, concluded that there is low potential for more deeply buried prehistoric archaeological resources across ARC. In a letter dated June 22, 2017, the State Historic Preservation Officer (SHPO) found the study results acceptable as a baseline for future investigation and treatment of archaeological resources at ARC and as a reference for professionally qualified staff for future undertakings (NASA\_2015\_0928\_001).

A review of the 2017 investigation indicates that the proposed undertaking is in an area of heightened sensitivity for near-surface prehistoric and historic-era archaeological resources (Appendix A, Figure 4). The APE's prehistoric archaeological sensitivity is based on its proximity to two previously recorded prehistoric archaeological resources, CA-SCL-14 and CA-SCL-15 (Confidential Appendix C, Figure 5). As noted in AECOM 2017, CA-SCL-14 and CA-SCL-15 "were originally noted in 1909 by N. Nelson in his analysis of Bay shellmounds conducted during the previous decade. In 1912, CA-SCL-14 [and] -15... were recorded by L. Loud as prehistoric occupation sites." A 1991 survey of Moffett Field conducted by Basin Research Associates failed to relocate any surficial evidence of the sites, and concluded that, due to development of the area, the sites were likely destroyed (AECOM 2017). Although these resources were identified as destroyed, the potential for redeposited material exists within areas mapped with prehistoric sensitivity.

The APE also is sensitive for historic-period resources (Figure 4). This sensitivity is based on historical mapping, which shows the APE within an agricultural building complex depicted on the 1899 *Palo Alto, Calif.* topographic quadrangle and near a "redwood post and mound" feature depicted on the 1859 plat of Rancho Posolomi (AECOM 2017). In general, it can be assumed that the APE is in an area that contained sparsely developed rural agricultural activities prior to 1931 and it must be assumed that a moderate potential exists for encountering buried historic-era archaeological resources within the proposed remediation area.

Ground disturbance in the APE would be limited to excavation through existing concrete pavement to remove contaminated soil to a depth of 5' in a location previously disturbed by the installation of the underground pipeline. The 2017 study concluded that both prehistoric and historic-era resources could be present to a maximum depth of 5' to 6' below existing grade, based on the typical depth of features associated with these resource types (AECOM 2017). Because the APE is entirely paved, further archaeological survey is not possible. However, because a moderate potential exists for prehistoric and historic-period archaeological resources to be encountered in the APE, it is recommended that archaeological monitoring occur during excavation.

#### 4.2 Architectural Resources

The APE is located in the NAS Sunnyvale Historic District and has been previously surveyed for historical significance. The APE covers an area of concrete pavement and an underground pipeline that are not contributing to the district. The surface and texture of the concrete are not distinctive. The closest district contributors to the APE are Hangar 2, Hangar 3, and MF1002 – Aircraft Parking Apron (Appendix A, Figure 6 – Preliminary Map of Contributing Airfield Features).

#### 4.2.1 NAS Sunnyvale Historic District

Listed in the NRHP in 1994, the NAS Sunnyvale Historic District is significant under NRHP Criteria A and C, and originally included only the earliest Spanish Colonial campus buildings around Shenandoah Plaza and Hangars 1, 2, and 3 (Appendix D). The original periods of significance of the district were identified as 1930 through 1935 and 1942 through 1946. The utilitarian style of later buildings was noted in the NRHP nomination; however, at the time of the nomination, several buildings were not yet 50 years old and were not considered contributing under the statement of significance that focused on Spanish Colonial Revival-style architecture and the engineering feat related to the airfield hangars.

In 2013, a historic property survey of Moffett Field was conducted to evaluate the significance of additional resources related to the airfield and concluded that the airfield and related resources are eligible for the NRHP under an expanded context for the NAS Sunnyvale Historic District (AECOM 2013). The SHPO concurred on expanding the boundary of the district on June 6, 2013 (NASA\_2013\_0417\_001) with a revised period of significance of 1942 to 1961 for the airfield (see Appendix A, Figure 2 for expanded historic district boundary). The district's statement of significance was also revised to include the World War II and Cold War military missions. No major alterations to the district have occurred since it was listed in 1994, with the exception of removal of the exterior materials of Hangar 1 to remediate hazardous materials. The district retains its integrity and remains eligible for the NRHP.

Hangars 2 and 3 are large, wood-framed dirigible hangars located on the east side of the airfield (**Photograph 1**). Constructed between 1942 and 1943, Hangars 2 and 3 are nearly identical hangars with designs based upon a standardized plan utilized for similar hangars at a handful of other airfields that were in operation during World War II. Hangar 2, located directly east adjacent to the airfield, was constructed first, whereas Hangar 3 was constructed second. Both were designed to facilitate the lighter-than-air coastal defense program at MFA during World War II, and both were used to house fixed-wing aircraft that operated out of MFA over the following decades.

In 1988, both hangars were determined individually eligible for listing in the NRHP for significance associated with events during World War II, and for their overall engineering and design. In 1994, Hangars 2 and 3 were each listed in the NRHP as contributors to the NAS Sunnyvale Historic District as excellent examples of military engineering and design during World War II. In 2013, Hangars 2 and 3 were also identified as contributors to the NRHP-eligible expanded NAS Sunnyvale Historic District, which also includes the airfield features at MFA that were significant to the various missions that took place between 1933 and 1961.

The most significant character-defining features of both hangars include the distinctively large massing; parabolic roof with corrugated aluminum siding; massive sliding hangar doors with supporting concrete towers, wood box beams and adjoining clamshell roof; the flanking brick masonry sheds; wood-framed truss construction set on repeating concrete bents; expansive interior concrete decking; and the vast open interior volumes. Additionally, the two structures are unique for the parallel siting and nearly identical composition, which creates the paired hangars appearance.



Photograph 1. Hangar 2 (right) and Hangar 3 (left)

The Aircraft Parking Apron (MF1002) is a contributing feature of the district. Built in 1945, it consists of concrete pavement with a distinctive square pattern. The East MF1002 is an expansive, paved surface located on the east side of the airfield extending along the East Parallel Taxiway from the California Air National Guard property northward and surrounding Hangars 2 and 3 (Error! Reference source not found.). Originally constructed in 1942 as a location for aircraft parking, the Navy expanded East MF1002 to accommodate increased aircraft operations at MFA with the southern apron expanded in the mid-1950s and the northern portion expanded ca. 1980.



Photograph 2. Aircraft Parking Apron (MF 1002)

The predominant character-defining feature of East MF1002 is the flat, paved surface organized in a repeating, squared grid pattern throughout. At the center of many of these repeating squares are embedded aircraft tie downs. While the entirety of the Parking Apron features this repeating pattern, character-defining spaces are those constructed within the 1933-1961 period of significance of the expanded NAS Sunnyvale Historic District. This includes the areas directly surrounding the hangars and to the south. The north ca.1980 portion, which is separated from the character-defining space of East MF1002 by an asphalt paved road, is considered non-character-defining because it was constructed outside the period of significance and is therefore not historic.

### 5. Assessment of Effects

Per 36 CFR Part 800.5(a)(1), an adverse effect results when an undertaking may alter, either directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the historic property's integrity.

There are no known archaeological sites in the APE, and the APE is in an area with a low potential for deeply buried prehistoric sites. However, the proposed work is within an area of heightened sensitivity for near-surface prehistoric and historic-period archaeological sites due to historical mapping and archival research that identified shell mound sites and an agricultural building complex historically recorded in the area. In general, it can be assumed that the APE is in an area with a moderate potential to contain resources associated with prehistoric settlement and sparsely developed rural agricultural activities prior to 1931. The amount of prior disturbance appears high due to prior pipeline installation in the APE, although remediation excavation may extend below previously disturbed soils and redeposited prehistoric archaeological materials may be present in redeposited fill. Per the 2017 investigation, archaeological monitoring, including preparation of a brief archaeological monitoring plan, is recommended prior to construction (AECOM 2017). Should the project uncover previously unknown subsurface archaeological resources, including when the monitor is present, contractors will immediately halt construction, secure the site, and notify NASA of the unanticipated discovery. NASA will follow the standard operating procedure for unanticipated discoveries as outlined in the Integrated Cultural Resources Management

Plan for ARC (AECOM 2014). Through implementation of mitigation measures outlined in the standard operating procedure for unanticipated discoveries, the undertaking would have no adverse effect on archaeological historic properties.

The survey identified one historic property within the APE, the NRHP-listed NAS Sunnyvale Historic District. However, no contributing elements of the district are in the APE. The project would be limited to a portion of concrete pavement that does not contribute to the significance of the district. While the undertaking is in proximity to contributing elements of the district, due to the scale and nature of the project, no effects on the district or its closest contributors, Hangar 2, Hangar 3, or MF 1002, are anticipated. Therefore, the undertaking would result in no adverse effect on historic properties.

### 6. Summary of Findings

The criteria of adverse effect were applied to historic properties in the APE, including the NAS Sunnyvale Historic District, and unanticipated archaeological historic properties that may be present in the APE. The proposed undertaking would not alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP. Therefore, a finding of No Adverse Effect per 36 CFR Part 800.5(b) would be appropriate for this undertaking.

### 7. References

AECOM, 2013. Historic Property Survey Report for the Airfield at NASA Ames Research Center, Moffett Field, California. Accessible online at https://historicproperties.arc.nasa.gov/downloads/hpsr\_airfield.pdf.

AECOM, 2014. Integrated Cultural Resources Management Plan for NASA Ames Research Center, Moffett Field, California. Accessible online at https://historicproperties.arc.nasa.gov/downloads/icrmp\_nasa\_arc\_all.pdf.

AECOM, 2017. NASA Ames Research Center Archaeological Resources Study. Accessible online (redacted) at https://historicproperties.arc.nasa.gov/downloads/section106\_achaeology\_20170224\_nasa\_att.pdf.

National Register of Historic Places (NRHP), 1994. U.S. Naval Air Station Sunnyvale, California, Moffett Field, Santa Clara County, California, NRHP # 94000045. Accessible online at <a href="https://historicproperties.arc.nasa.gov/downloads/nrhp\_registration.pdf">https://historicproperties.arc.nasa.gov/downloads/nrhp\_registration.pdf</a>.

### **Attachments**

Appendix A: Figures

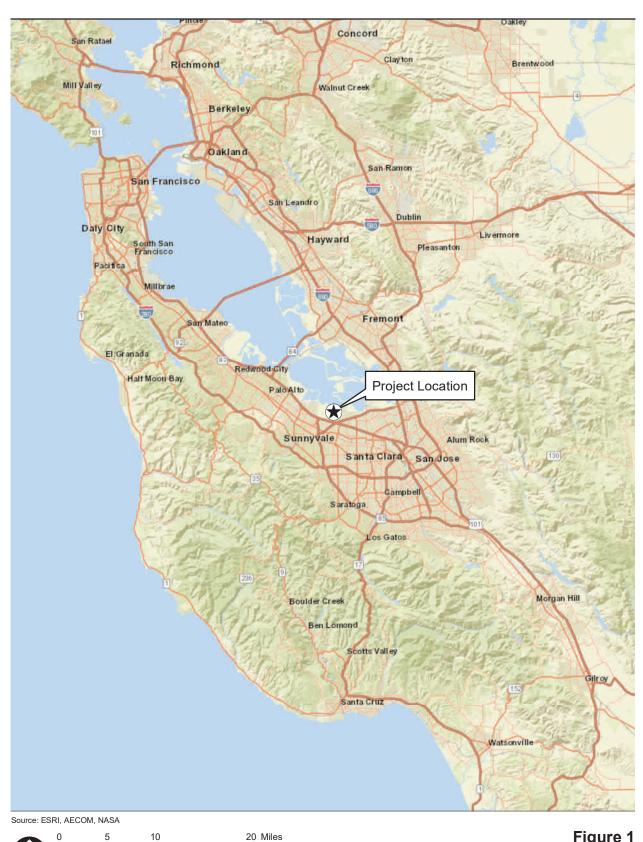
Appendix B: Project Drawings Appendix C: Confidential

Appendix D: National Register Nomination for U.S. Naval Air Station Sunnyvale, California

## Appendix A

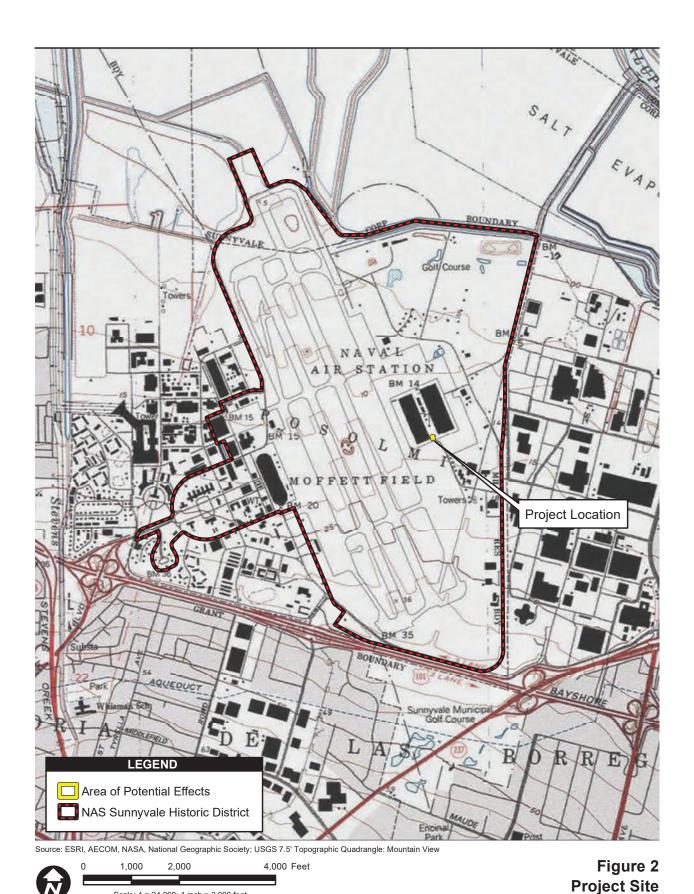
## **Figures**

Figure 1 – Project Location
Figure 2 – Project Site
Figure 3 – APE
Figure 4 – Archaeological Sensitivity
Figure 5 – see Appendix C
Figure 6 – Preliminary Map of Contributing Airfield Features

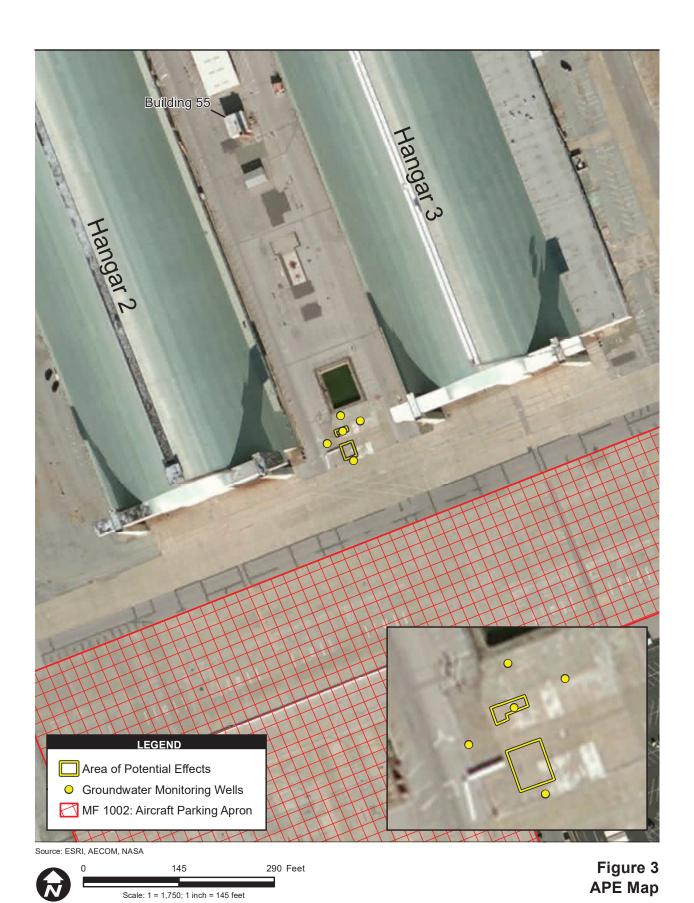


Scale: 1 = 633,600; 1 inch = 10 mile(s)

Figure 1 Project Location



Scale: 1 = 24,000; 1 inch = 2,000 feet

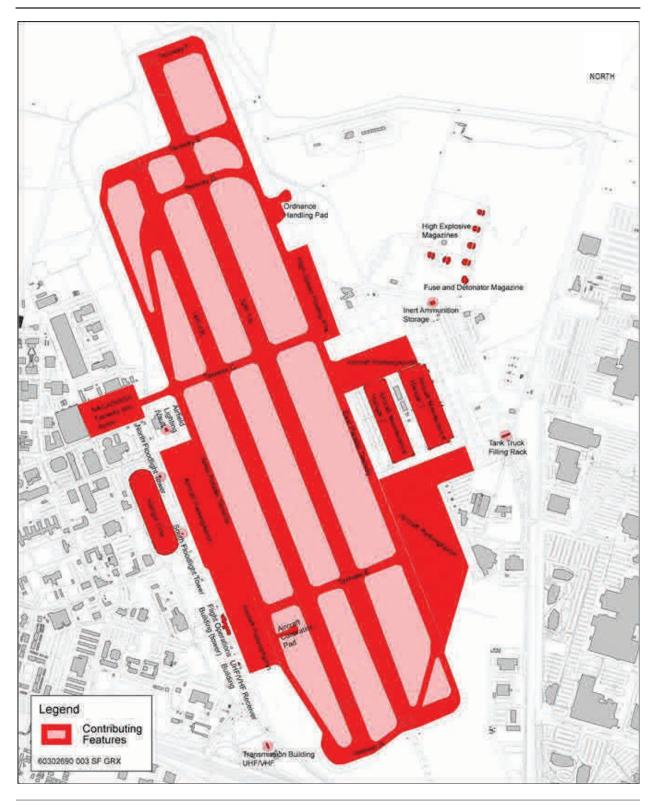




0 250 500 Feet

Figure 4
Archaeological Sensitivity Map

Scale: 1 = 2,250; 1 inch = 190 feet



Source: ESRI, AECOM, NASA



Figure 6 Preliminary Map of Contributing Airfield Features

## The following content was redacted from this public posting:

Appendix B: Project Drawings

Appendix C: Confidential

## Appendix D

National Register Nomination for U.S. Naval Air Station Sunnyvale, California

## National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines* for Completing National Register Forms (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property			
historic name United Sta	ites Naval Air Station Sunny		
other names/site number U, S. Nava	al Air Station Moffett Fiel	<u>d - Central H</u>	Historic District
2. Location			
street & number   Central Distr	ict		not for publication
	tion Moffett Field		vicinity
state California code C/		code CA	085 zip code 94035
3. Classification			
Ownership of Property	Category of Property	Number of Beso	urces within Property
private	building(s)	Contributing	Noncontributing
public-local	X district	40	54 buildings
public-State	site		sites
X public-Federal	structure	1	
LA pounci ederal		^	structures
	object	43	objects 54 Total
e of related multiple property listing	r	Number of contri	buting resources previously
		listed in the Nati	
4. State/Federal Agency Certificat	ion		*
National Register of Historic Places a	ination of eligibility meets the document and meets the procedural and profession I does not meet the National Registe	nal requirements s	et forth in 36 CFR Part 60.
Signature of certifying official			Date
State or Federal agency and bureau			
In my opinion, the property meets	does not meet the National Registe	er criteria. See	continuation sheet.
Signature of commenting or other official			Date
State or Federal agency and bureau			
5. National Park Service Certification	lion		
I, hereby, certify that this property is:			
entered in the National Register.			
See continuation sheet.			
determined eligible for the National			
Register. See continuation sheet.			
determined not eligible for the			
National Register.		w	
removed from the National Register other, (explain:)			
	Sænature of th		

6. Function or Use	
Historic Functions (enter categories from instructions)  Defense Naval Facility	Current Functions (enter categories from instructions) Defense Naval Facility
Air Facility	Air Facility
7. Description	
Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
	foundation <u>concrete</u>
Late 19th and 20th Century Revivals Mission/Spanish Colonial Revival	walls <u>stucco</u>
Other: Dirigible Hangar	roof clay tile
WW II Blimp Hangar (2)	otherterra cotta panels

Describe present and historic physical appearance.

### SITE DEFINITION

The site consists of a large number of buildings that were constructed over an approximately 60 year time frame from the early 1930's until today. The buildings are clustered in a formal campus-like layout that is defined by a western-facing gated entrance and a very well tended land-scape which includes mature specimen trees, shrubs, and manicured lawns.

The site can be easily divided into its stylistic components that also define the different eras of construction over the base's lifetime.

The oldest and most historically significant buildings, from an architectural and engineering standpoint that form a coherent core, include the formal cluster of buildings dating from 1933 that lead up to, and include, the imposing Hangar #1 (the original dirigible hangar) and WWII Blimp Hangars. This area of the base is bounded by Bushnell Road on the north, the automobile parking spaces behind Sayre Avenue on the east, Westcoat Road on the south; and the entry, Clark Road, on the west. The central area is laid out in an axial plan in a northeasterly direction with the original buildings symmetrically placed along a grand central greensward. In addition to this very defined central space where the earliest major base buildings are located, there is an equally significant adjunct of 9 officers' residences clustered around Berry Drive just to the south of the main gated entrance in another formally laid out plan with grass medians, a grass island at the end of the southern <u>cul-de-sac</u>, and a characteristically suburban curved residential street. In keeping with the symmetry that was so strong to the original plan, another unbuilt residential complex was originally planned for the northern side of the entrance drive.

These earliest buildings, which were designed by the Navy Department Bureau of Yards and Docks, exemplify California's most popular contemporary architectural style of the 1920's and early '30's. They are constructed in a late Spanish Colonial Revival architectural style (a style that was equally as popular in government construction in the eastern sections of the United States during the 1920's and into the early 1940's), as well as aspects that presage the modern designs of the Internationalist styles which would predominate in American architecture for the next thirty-five years (from approximately 1940 to 1975) .

## UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

### NATIONAL REGISTER OF HISTORIC PLACES EVALUATION/RETURN SHEET

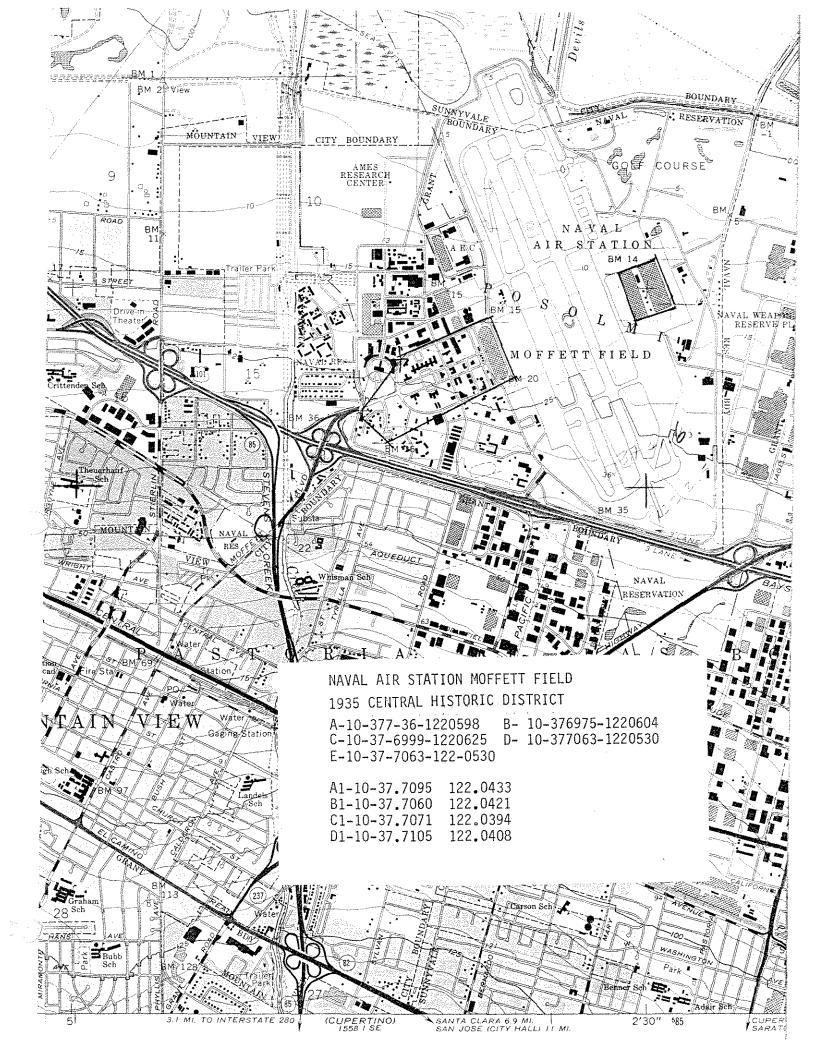
REQUESTED ACTION: NOMINATION	
PROPERTY US Naval Air Station Sunny NAME: t	yvale, California, Historic Distric
MULTIPLE NAME:	
STATE & COUNTY: CALIFORNIA, Santa CI	lara
DATE RECEIVED: 1/13/94 DATE OF 16TH DAY: 2/11/94 DATE OF WEEKLY LIST:	ATE OF PENDING LIST: 1/26/94 ATE OF 45TH DAY: 2/27/94
REFERENCE NUMBER: 94000045	
NOMINATOR: FEDERAL MAYY	
REASONS FOR REVIEW:	
	PE: N LESS THAN 50 YEARS: N N PROGRAM UNAPPROVED: N TT: Y NATIONAL: Y
COMMENT WAIVER: N ACCEPT RETURN REJECT	2/24/94 DATE
ABSTRACT/SUMMARY COMMENTS:	
	allfornia Historic District is eligible under NR crit Architecture, and Engineering. The discontiguous

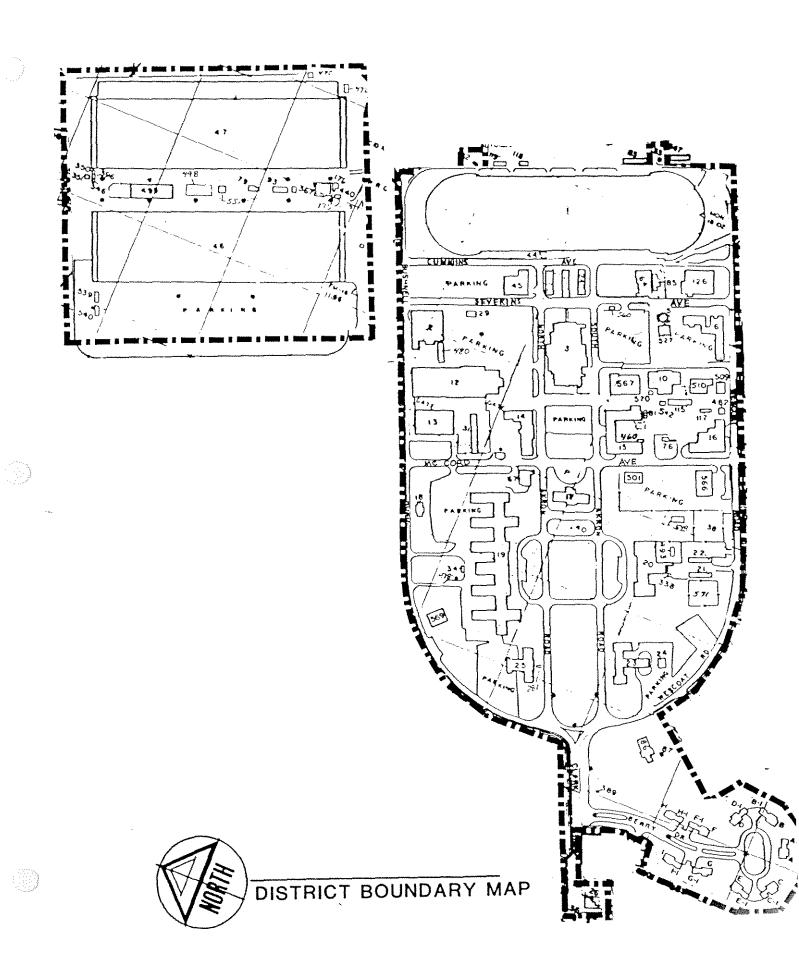
The U.S. Naval Air Station Sunnyvale, California Historic District is eligible under NR criteria A and C in the areas of Military History, Architecture, and Engineering. The discontiguous district represents a rather unique and significant episode in the development of U.S. naval aviation prior to World War II. The Sunnyvale base was one of two Naval Air Stations built to port lighter-than-air dirigibles during the 1930s. Dirigible Hangar #1, the later blimp hangars # and #3, and their accompanying support buildings all represent excellent examples of early twentieth-century military planning, engineering, and construction.

The three enormous airship hangars represent significant engineering accomplishments and they are among a limited number of extant historic airship facilities in the United States. The core of the historic Naval Air Station--centered on a landscaped "common" and dominated by the looming airship hangars--remains largely intact and includes fine regional examples of Spanish Colonial Revival design.

RECOM./CRI	TERIA A	ccept	A+C
REVIEWER_	PAUL R.	שופעיה	A 51
REVIEWER DISCIPLINE	Wisten	lAm	
DATE	2/24/94	/	

DOCUMENTATION see attached comments Y/N see attached SLR(Y)N





## HISTORIC DISTRICT BUILDING LIST

Building	Contributing/ Non-Contributing	Building	Contributing/ Non-Contributing
1	С	79	NC
	Č	8 1	NC
2 3	NC	8.5	NC
5	С	86	NC
6	С	8 7	NC
1 2	NC	93	NC
13	NC	115	NC
14	NC	117	NC
1 5	С	123	NC
16	С	133	NC
1 7	C C C C	175	NC
18	С	333	NC
19	С	338	NC
20		346	NC
2 1	С	350	NC
22	С	351	NC
23	С	367,389	NC
24	C	396	NC
25	С	440,460	NC
26	C	470	NC
29	NC	472	NC
3 1	NC	478,482	NC
3 2	C	493	NC
3 3	С	498	NC
3 4	NC	499	NC
3 6	NC	501	NC
3 7	С	509	NC
38	NC	510	NC
4 0	NC	527	NC
4.4	NC	542	NC
4.5	NC _	553	NC
4 6	C	566	NC
47	C	567	NC
5.5	C	569	NC
64	NC	570	NC
67	NC	753	NC NC
76	NC	941	NC
		942,943	NC

## National Register of Historic Places Continuation Sheet

This hybrid style forms a unifying element that not only holds the myriad of architectural uses together, but gives the entire complex a very satisfying central theme. The style is highly ornamented in the most significant buildings (such as the Administration and Bachelor Officers' Quarters) and stripped of ornament, but no less supportive of the whole in the smaller out buildings and garages. Interestingly, the building that is the <u>raison d'etre</u> of the entire Naval Air Station, Hangar #1, eschews any historicism in its design, but rather reflects the highest Streamline Moderne forms of modern technology at its finest.

Another slightly newer cluster of buildings is also defined by their distinctive architectural style which reflects the most popular designs of their time. These buildings are those structures which were built in the 1940's and early '50's and that are designed in a very plain International style of architecture defined by the simple stripped geometrical forms of the structures. These interesting examples are located at a few scattered sites within the original plat noted above (i.e. the Post Office, #67, for example), as well as being set in a long row along Dailey Road between the original campus plan and the Bayshore Freeway (#152). Other noteworthy buildings include the Control Tower (#158) at the far eastern edge of the site and the original Chapel Building (#86), which is a reinterpreted hybrid style that exhibits aspects of both a stripped Spanish Colonial Revival design and ornament hinting at more of a Mission Revival style. Additionally, two slightly smaller, but no less impressive hangars (Hangar #2 and #3), were constructed across the runways to the east of Hangar #1. These buildings were designed for the smaller blimps that replaced the huge rigid framed dirigibles of the 1930's for which Hangar #1 was designed. They also were designed in a much more prosaic and conventional architectural style than the metal sheathed futuristic Hangar #1.

A building that provides visual compatibility with the 1930's Spanish Colonial Revival buildings is the Chapel. This is due both to its physical location within the historic district, as well as to its architectural design, which is much more compatible with the older buildings on the base rather than the later International styled buildings. Early photos of the building illustrate a structure whose basic form of rather simply pitched cruciform plan appears to be very standard designed archetype military base chapel of the 1940's. But to this basic form, the designers add very site specific detailing which, though not technically a re-creation of the Spanish Colonial Revivals around it, very handsomely picks up hints of the building characteristics of the older structures. These details include, most importantly, the cupola which mimics the tower on the Administration Building, and the projecting curvilinear portico with its stone-like entry frame which takes directly from the Spanish Colonial Revival interpretations surrounding. The end result is an almost textbook example of a successfully designed new structure sensitive to an established architectural campus. Because the chapel was constructed well after the 1933 period it is not a contributing building to the historic district.

Because the International style buildings are less than 50 years old and are not individually exceptional, they will not qualify for listing in the National Register at this time and will not be discussed in any detail. This group consists of buildings 148-156, 158 and building 67.

# National Register of Historic Places Continuation Sheet

Section	number	7	Page	3
~~~				

In addition to these two major stylistic groupings, there are a number of other buildings on the site that have been constructed over the past approximately 50 years that fill up the site, but do not represent very fine examples of architectural design. These buildings are characterized by their utilitarian function, such as the number of Quonset huts (#111, #118 and #119) found throughout the site, as well as the plethora of small wooden and stucco buildings with little discernible styling that comprise much of the barracks, enlisted housing, shopping and warehousing spaces (#E-52, #E-13, #E-29, #347, #223, #245, and #244).

Thus from a specific design standpoint, the site can be divided into the following five main components that comprise its strongest identifying features:

- A. Original Spanish Colonial Revival Design
- B. Significant Engineering Features (Hangars #1,#2,&#3)
- C. Miscellaneous Supportive Design Features
- D. Post 1935 buildings designed in the Spanish Colonial
- E. International Style Buildings from the 40's

Revival Style

Out of these five categories, the proposed historic district from the 1930's will include all those features identified with item "A, B & C" immediately above.

## A. ARCHITECTURAL DESCRIPTION OF THE SPANISH COLONIAL REVIVAL-DESIGNED ORIGINAL BASE BUILDINGS.

The original plan of Moffett Field was constructed in an architectural style that had as its antecedent the exuberant and capricious ornamentation applied by the 17th Century architect, Jose Churriguere, and eloquently revived by Bertram Goodhue in the design for the 1915 San Diego Panama Pacific Exposition. The Navy first attempted the style at Chollas Heights Radio Transmission Station in 1916 and followed with Goodhues' Marine Corps Recruit Depot, c. 1920, Naval Air Station North Island, c.1921, and his sketches for the Naval Training Center in San Diego, a year or so later. This form of Spanish Colonial Revival design reached its zenith at the end of the 1920's and was gradually losing favor to the modern designs of the mid-to-late 1930's. By the 1940's only some very late examples, usually transitional in styling that reflected the rise of both modern schools of architecture (Moderne and Deco styles, as well as the later International or Bauhaus-influenced styles) were being built.

The complex of original buildings that comprise the heart of the Naval Air Station Moffett Field are examples of late Spanish Colonial Revival design reflecting a much more severe example of this style with strong influences of the more modern style precepts, as well as hints of Eastern Colonial designs. The resulting hybrid significantly alters the original architecture of this style.





## National Register of Historic Places Continuation Sheet

Section	number	7	Раде	4
OCCION	HOHIDOL		ı aya	

These buildings are characterized as essentially two-storied white or off-white stucco structures that are capped by very low-pitched Spanish tile roofs, which are punctuated by projecting chimneys, air ducts and, in the case of the true centerpiece building, the Administrative Building (#17), a richly ornamented, roof pavilion where corner columns support a decorated dome. The buildings are all rectangular in plan with either central projecting spaces or corner wings. Wall surfaces are very plain with the major break up of space occurring either in the location of rectangular-shaped windows, slightly projecting stringcourses between the floors, round arched entryways or arcaded ornamentation styled to look like granite around the major entry doors and surrounding significant window spaces.

It is the variation of the above major design elements that define the original base architecture. The two most handsome entrances are the round arched arcades that distinguish both the aforementioned Administration Building and the equally impressive Bachelor Officers' Quarters (#20). Repeated ornamentation include the flattened urn motif, various cartouches, and quarterfoil windows found along the exterior surfaces of all the major structures. The juxtaposition between the flat surfaces of the exteriors contrasting with the florid ornament around the major doors and windows provide the perfect tension that distinguishes the Spanish Colonial Revival style. A notable somewhat stripped example of this style is the impressive original Aircraft Tower (#18).

Some of the minor out-buildings, although stripped of much ornamentation, exhibit sensitive design features such as the low stepped parapets of buildings #22 and #2, the repeated multilight apertures of #10, and the simple, yet distinctive massing of the original portions of #6, which acts to reinforce the common design theme throughout the historic core. All of these original outbuildings significantly reinforce the common design theme of the historic campus.

The second cluster of original buildings, which forms an equally impressive uniform design statement, is found in the earliest residential units of the detached officers housing. In this extremely pleasant space, made so by its luxuriant landscaping and large unbroken lawns, a very simple house plan is repeated with only slight variations. The structures are designed in a very stripped and somewhat severe Spanish Colonial Revival style with two-storied, rectangular plan residences joined to a garage, either a one or two storied garage, by an arcade. The roof lines are low pitched gables that are sheathed in red Spanish tiles and punctuated by end fireplaces. Apertures are symmetrically placed on the structures with the dominant design characteristically reserved for the front entry. Windows are generally rectangular in shape, double hung and 3 over 2 in design. As with the major buildings on the working base section, here two stringcourses and various door surrounds provide the major contrast to the very simple stucco walls. Additionally, a similarly designed structure forms a prominent security building at the front gateway.

## National Register of Historic Places Continuation Sheet

Section	number	7	Page	5	

## B. DESCRIPTION OF THE ORIGINAL ENGINEERING FEATURES (HANGARS #1, #2, AND #3)

Completely separate in design, but of such striking style and size as to warrant separate discussion are the three buildings that form the <u>raison d'etre</u> of the entire complex. The three hangars are of such proportions that for this reason alone they warrant the title "landmark". Aesthetically, the original hangar, which was constructed to hold USS MACON, a dirigible, is of such a unique design that it stands apart even from its later sister buildings. Hangar #1 is a metal sheathed behemoth whose rounded shape is both the epitome of the aerodynamically influenced Streamline Moderne style as well as a stylistic cousin to the huge airship that originally berthed inside the mammoth hangar.

Above all other buildings found on the Moffett Field site, Hangar #1 is without question the most significant building both architecturally and historically. It is one of the major buildings of Northern California, and has been recognized as an Engineering Landmark by the American Society of Civil Engineers.

Hangars #2 and #3 are significant more for their size than their unique styling or design. They represent more prosaic attempts at constructing very large military hangars. Similarly designed structures are found on Marine Corps Air Station, Tustin, California and at Coos Bay, Oregon. The more common design does not, however, detract from the sheer magnitude of the two huge buildings side by side. Along with Hangar #1, these two buildings help define the south San Francisco Bay Area from all distant directions.

# C. DESCRIPTION OF THE OTHER SUPPORTIVE DESIGN ELEMENTS (I.E. LANDSCAPING, GATEWAYS, ARTWORK AND ITEMS OF INTEREST IN THE LANDSCAPE, STREET LIGHTING, AND SIGNAGE)

The third and final group of elements add immeasurably to the quality of design cohesion that characterizes the Naval Air Station Moffett Field site. These elements support the physical layout of the site plan as well as the quality of the original historical architecture. They also help define the campus-like quality of the base as well as unify the disparate building styles and types.

Most prominent of these supportive elements is the landscaping. The ubiquitous mature trees, the huge green spaces, and the careful placement of plants and shrubs which add immeasurably to the <u>mise-en-scene</u>. The luxuriant and well tended landscape is the first feature which one experiences after passing through the entry gate. Early photos of the site show a very desolate natural landscape which was essentially bay lowlands. Blueprint plans from April 29, 1933 illustrate the importance that a unifying and coordinating landscaping plan for the air station had in forming the basis for today's superlative luxuriant landscape. There could be no doubt that the existing grounds could not have been produced without a well conceived original plan.

## National Register of Historic Places Continuation Sheet

	Section number	7	Page	6
--	----------------	---	------	---

Of almost equal importance in differentiating the site from its surroundings is the entry wall and gate itself (#36). Although very restrained in design, the gate forms a physical entrance into the unique area from the very bland surrounds. It should be noted that the wall, gateway, and gatehouse all derive from the original base architectural design plan.

Street furniture, interesting items on the landscape, and street lighting also add to the unique quality of the site. The furniture includes a detached community message board, a sundial and an historic anchor, both in front of building #25, as well as within the central greensward. The street lighting still retains its original bases, but the lamps themselves, from a later '50's design, are somewhat inconsistent with the Spanish Colonial Revival buildings of the historic core. Replacement with a more original form should be encouraged.

Signage too helps add to the unifying elements of the site. It is, most prominently in the historic core, understated in blue with gold lettering which is very supportive of original high design standards. Such attention to detail should also be encouraged to continue. For it is in the sum of all of these disparate features that the whole of a unique and memorable built environment results.

### **INDIVIDUAL SITE DESCRIPTIONS:**

The following descriptions define the special design characteristics that distinguish the architecturally significant buildings from the 1933 plan (with two notable exceptions being a description of the 1943 designed Hangars #2 and #3).

#### HANGAR # 1: BUILDING #1

The site consists of a very large (1140'x308'x194') single-story, dirigible hangar that is constructed with three hinged steel truss arches and "X" cross bracing that is sheathed in large metal plates and set on a huge rectangular-oriented, elliptical shaped, floor plan and designed in a slightly flattened parabolic form. The structure further exhibits four rows of very large rectangularshaped and horizontally-oriented window bands along its two dominating eastern and western facing flanks. These apertures appear flush with the immense metallic skin of the building and greatly add to the very futuristic aerodynamic effect of the design.

Of particular engineering note are the hangar doors that run the full height of both the north and south-facing elevations. These doors are retractable and form a halfdome shape when closed.

The building exhibits a very clean, Streamline Moderne design which perfectly mimics the form of the airships themselves. Located perpendicular to the axis of the station plan this dominate structure provides the focus of the 1933 station plan.

The mammoth structure designed to hold fully inflated giant dirigible airships from the 1930's military fleet (such as USS MACON) was actually constructed in 1932 preceding the buildings of the surrounding base which date from 1933. The structure is important due to its unique use (dirigible hangar), beautifully executed Streamline Moderne architectural design, ingenious



## National Register of Historic Places Continuation Sheet

|--|

engineering construction; and for its very size that still dominates a greatly urbanized Santa Clara County in the 1990's. From all aspects of national landmark status criteria, this building qualifies on its own. When added within the context of the surrounding supporting campus plan, the entire ensemble forms a very unique sense of place within the built environment and continues to exhibit national prominence.

#### HANGAR #2 AND #3: BUILDINGS #46 AND #47

The site consists of twin hangars that were designed for the, blimp fleet during WWII. They are of treated California redwood frame construction, configured on a rectangular plan in a more flattened parabolic form than Hangar #1; and characterized by their immense, moderately pitched porticoes at each of the north and south-facing hangar doors. These dominating entries are supported by very large concrete piers at each of the four corners. The twin buildings are set on a site plan that is directly oriented with the earlier Hangar #1, which is due west. The scale of the structure is exemplified by their dimensions, which at 1,075'x297'x171' (180,518 sq. ft.) make them slightly smaller than their predecessor, but still very impressive on the landscape. The use of wood construction instead of a steel truss system was in response to the war effort. Like most west coast military facilities constructed after 1941, metal was used very sparingly to conserve the resource for use in constructing ships and armament.

The design of these two buildings is in a much more conservative architectural style than the futuristic form of Hangar #1. These later hangars are almost domestic in their gabled porticoes. They definitely lack the daring and ingenuity of the other hangar's form and they are much less a unique design to the area. In fact, four other structures of like design were built on the west coast during World War II, to house the blimps used to patrol the Pacific coastal waters of the United States. Two in Coos Bay, Oregon which are no longer owned by the Federal Government and two on what is now Marine Corps Air Station, Tustin in Southern California. All four of these structures have been nominated to the National Register.

Although not of equal architectural or design merit as Hangar #1, these two like-structures are significant from both an historic perspective (as excellent extant examples of WWII blimp hangars) as well as an architectural/engineering perspective (they are after all buildings of incredible size and stature upon the landscape). The twin structures further add to the important design whole of the best of the original 1933 plan and the just slightly less impressive structures from the 1940's which help in-fill much of the site. They were completed in 1943. The combined visual power of Hangars #1, #2, and #3 form a physical presence upon the urbanscape which still dominates the low horizontal design of the Santa Clara Valley.

## National Register of Historic Places Continuation Sheet

Section	number	7	Page	8
				***************************************

#### **ADMINISTRATION BUILDING: BUILDING #17**

The site consists of a two-story structure that is constructed on a shallow cruciform rectangular floor plan which is built of wood and sheathed in stucco with red Spanish tile roofing and terra cotta ornamentation, especially notable in the window and door surrounds. The building is the most prominently sited structure within the 1933 campus plan. It is set in the very heart of the open grassy median as a definite center point to the original plan. Its architectural design represents a late example of Spanish Colonial Revival style with some modifications that give it a kinship with Eastern military bases of the same vintage (that were designed in dry formal interpretations of Colonial Revival).

The building is 148'x41 'x37' and contains 18,954 sq. ft. The structure is characterized by the features which define all of the original buildings: the very low pitched, slightly hipped and tiled roofline. Exterior walls are flat and devoid of ornament, save a stringcourse running the entire perimeter of the building and separating the two stories. The eave line is very shallow. Windows are simple, rectangular in plan, vertical in orientation, multi-paned and double hung. Overscaled terra cotta ornamentation define the major front and back entrances, as well as the centered second story window. The main or west-facing entrance projects out from the main structure and exhibits a triple round-arched, recessed entrance.

Ornamental urns, pilasters and floral design (characteristic of Churrigueresque Spanish architecture of the 1 7th Century) add a much needed ornamental counterpoint to the very simple and severe basic design.

A further feature which distinguishes this structure among all of the others in the original campus plan is the small centered Bell Tower. This small belvedere is capped by a diminutive, red-colored dome and distinguished by very flat arches at each of its four faces. This architectural style is much more characteristic of the colonial designs of the Eastern United States and is a major factor in classifying the overall base design as a modified Spanish Colonial Revival style.

With the nearby Bachelor Officers Quarters and the Married Officers' Residencies, the Administration Building, (which is also historically referred to as the Admirals Quarters) is the most architecturally important building from the original 1933 construction (excluding Hangar #1). This building sets the design criteria that is followed throughout the original campus plan. It acts both as a handsome example of hybrid revivalist architecture which is prominently set at the most important axial juncture of the site and as one of the most lavishly ornamented of Moffett Field's original structures. As such, the Administration Building is a key to the historic fabric of the site.

## National Register of Historic Places Continuation Sheet

|--|

#### **BACHELOR OFFICERS QUARTERS: BUILDING #20**

The site consists of a large, two-storied structure that was constructed on an irregular rectangular shaped site plan which is actually symmetrical in form. The building exhibits a more ornamented interpretation of a hybrid Spanish Colonial Revival architectural design. It is characterized by the same basic features that distinguish all of the original buildings. The roofline is lowpitched and sheathed in red Spanish tile, the eave is fairly shallow, wall surfaces are unadorned white stucco; and window shapes are paired rectangular forms which are double hung, 3 over 2 in form. Major entrances are distinguished by terra cotta facing that emulates granite. Three large round arches provide the building with a very elegant entryway. Flat unadorned pilasters separate these arches. They are further adorned with flat urn detailing. The characteristic stringcourse separates the two floors. A rear wing projects toward the south.

The structure is sited symmetrically across from the equally prominent, but slightly less architecturally impressive, Bachelor Enlisted Quarters (#19) which has been greatly enlarged with a rather bland International Style addition at both ends. The structure is further enhanced by a well conceived and equally well maintained landscape plan.

Along with the cluster of major buildings that are set along the formal axis of North and South Akron Roads, the BOQ helps define the high quality design character that distinguishes the historic core of Moffett Field. The structure is an extremely fine example of historicist architecture of the 1930's and remains a key element in the cohesion of the base's physical form.

#### GYMNASIUM: BUILDING #2

The site consists of a very large, single-story, plaster-sheathed, steel framed building that is constructed on a slightly irregular rectangular floor plan with a flat roof that is distinguished by slightly projecting stepped parapets that hint at the utilitarian designs of the original campus plan of 1933, the roof is wood sheathing on steel beams. This structure exhibits a ubiquitous projecting stringcourse encircling the building, as well as the very plain beige plaster walls. The major design feature on this essentially utilitarian structure is in the window placement. Here, the structure is characterized by very tall, horizontally-banded, multi-paned apertures which act to break up the surface of the exterior walls either as centered indentations on large expansions of plaster or as repeated forms which act almost like columns along the major side elevations.

This structure avoids, as do all of the original functional outbuildings, the Spanish Colonial Revival design of the major living areas of the base. Interestingly, it provides a handsome architectural bridge between the very futuristic Streamline Moderne design of Hangar #1 and the more historicist styles of the original campus plan.



# National Register of Historic Places Continuation Sheet

|--|

The site is significant both historically and architecturally. It was originally constructed to be a balloon hangar which justifies its extremely large interior single story space (19,691 sq. ft., 130'x88'x63'). Additionally, the building sets the reserved design criteria for the outbuildings on the base which handsomely support their more ornamental Spanish Colonial Revival contemporaries. Features which characterize these original outbuildings include flat roofs, shallow parapets which are slightly stepped; and severely unadorned exterior walls. Windows are rectangular in form and provide the dominant design ornamentation.

Although these buildings do not provide the obvious ornamentation, stylistic historicism or landscaped surroundings of the more apparently significant original Spanish Colonial Revival structures, they exemplify an extremely sophisticated design criteria of their own which greatly adds to the overall cohesion of the existing campus. In their own right, the Gymnasium, along with similarly designed original 1933 outbuildings such as the Garage (buildings #21 and #22), are major factors from the original 1933 design which make NAS Moffett Field so architecturally distinguished.

#### **BUILDING #23, INSTRUCTION BUILDING**

Fronting on Akron Road, the former dispensary is one of the buildings that defines the original architectural design and is symmetrically placed, opposite building #25, to balance the entrance to the base's formal plan. The two story, above grade, building is basically a "T" form executed with the typical elements of the Spanish Colonial Revival architecture, low pitched tile roof, stucco sheathing and terra-cotta ornamentation. The front facade has a central entrance recessed behind three arched openings that form an arcade. Terra-cotta surrounds decorate the three windows above the entry and the doors at the east and west ends. The building, originally the base dispensary, was enlarged by the U.S.Army's Air Corps in 1936, when extensions were added to the rear and the east end. The building is 105 feet by 96 feet and 10,995 square feet of floor space.

Of the original buildings, #23 and #25 are significant because of their representation of the Spanish Colonial Revival design and for their locations at the entrance of the working station. Opposite each other, across the central lawn mall, these buildings provide symmetry to the original plan.

# National Register of Historic Places Continuation Sheet

Section	number	7	Page	11
---------	--------	---	------	----

#### **BUILDING #25 THEATER**

The theater, two stories over a basement, is a typical example of the significant supporting buildings that define the original architecture. The "T" form is executed with a low pitched tile roof, stucco sheathing and terra-cotta ornamentation. The typical protected entry is behind an arcade that, in this case, is projected forward. The fenestration, again typical of the dominant style, is symmetrical for all floors except those voids above the entrance. Here the pattern changes to a band of windows divided into three elements that balance the three arches of the arcade. The building is 150 feet by 110 feet in an irregular plan that accommodates 7,745 square feet of floor space.

#### BUILDINGS #21, #22 AND #24 - GARAGES

This group of detached garages are supportive elements in the historic district. Each is one story and is constructed using typical materials and simple forms of the ancillary buildings. Buildings #21 and #22 retain the original use and design, including corner parapets. The buildings, located behind Building #20, are almost identical, 98 feet by 24 feet with garage door openings facing each other. Building #24, located behind Building #23, was the ambulance garage. It is smaller 45 feet by 30 feet. The large garage door openings have been infilled and the interior space modified for administrative offices.

The garages are significant supportive buildings that compliment the architecture of the larger buildings. Building #24 retains the original mass and form but, the alterations have changed its appearance as a garage.

#### **BUILDING #10 - HEAT PLANT**

One of the original buildings, the heat plant is a large industrial building of block massing in an irregular "T" form that is two stories in height. A single story element fits into the south west corner. Typical of power plant design, the dominate feature is the fenestration. This building has window banks that extend to the second story. A coursing separates the massing with smaller rectangular windows above the band. In keeping with the dominant architecture, this utilitarian building is decorated with a simple surrounds at the entrances. Flat arches top the tall window banks. The glazing is rectangular pane divided mullions. Most of the first floor windows have transoms that are operable. While the upper rows are all operable. A second coursing divides the lower portion of walls at about four feet, the basement line. Building #10, is sheathed in stucco with a flat roof. This building is a handsome version of a utilitarian industrial design.

The heat plant is one of the original buildings. It is significant as an example of the dominate architectural design stripped to the essence, entrance surrounds and arched windows, for industrial use.



# National Register of Historic Places Continuation Sheet

|--|--|

#### STRUCTURE #5 - Water Tower:

Supported by a tall steel frame, the water tank is topped with a conical roof. The traditional red and white checkered paint defines this classic industrial design. One of the original structures, the water tower is a functional and visually distinctive feature.

#### BUILDINGS A THROUGH I AND ANCILLARY GARAGES A-1 THROUGH 1-1

REPRESENTATIVE SINGLE FAMILY RESIDENCES (COMMANDING, SENIOR AND JUNIOR MARRIED OFFICERS QUARTERS):

The original 1933 detached residential structures are all designed in a like architectural style of which any single building represents an archetype for the whole. The example used here is site #A1, which is referred to in the 1933 landscape plan as the "Commanding Officers' Quarters".

The site consists of a very simple, two-storied, rectangular-planned single family residence that is constructed of wood frame with a low gabled red Spanish tiled roof over a very plain stuccoed exterior (which is punctuated by a formal placement of both windows and doors). A simple chimney adorns the western facade. An attached single-storied, round-arched breezeway connects the residence with a large, two-storied, rectangular-planned garage set slightly behind the main structure.

Stylistically, the residence reflects all of the specific design criteria which unifies all of the original 1933 Spanish Colonial Revival architecture on the base. Windows are almost flush with the plain exterior walls. They are also essentially rectangular in shape, double hung, multi-paned and symmetrically placed along the facades. A colored, projecting stringcourse separates the two stories. The front entry is the most prominent exterior feature with a slightly recessed almost flat arched entry with projecting surrounds. An ornamental sidelight window is balanced by a large wrought iron projecting lamp on both sides of the main entrance.

Landscaping is characteristically both formal and very well maintained. The very large mature trees add immeasurably in setting apart the residential quarter as an oasis amid the functioning base. The open greenswards that distinguish the street directly tie in with the more formal axial plan of the rest of the base. The curved street pattern illustrates the influence of contemporary suburban design on such residential planning even on a military base.

The original 1933 detached residences form a key architectural component in the significant whole that distinguishes the site plan of the naval air station. Along with the verdant landscaping and extra wide spacing, this enclave of buildings helps define all that is special about the site from a design perspective.

# National Register of Historic Places Continuation Sheet

Section	number	7	Page	13
OGCHOH	HUHHOU	***************************************	, ago	***************************************

# CONTROL TOWER: (AEROLOGICAL BUILDING FLIGHT CONTROL TOWER) BUILDING #18

The site consists of a moderately-sized (3590 sq. ft.), two-storied building with a centered third story, hexagonal-shaped Control Tower. The structure is designed on a slightly varied rectangular floor plan with a very minimal attempt at exterior ornamentation. It is another of the utilitarian structures from the original plan that exhibits hints of the Spanish Colonial Revival design of the major buildings (in the centered round arch, the overscaled twin wrought iron Spanish styled lamps on both sides of the entry and the ubiquitous terra cotta surrounds ornamenting the front door). Otherwise, this structure is very simple in its design. Its walls are unadorned plaster. Windows are slightly recessed, rectangular in plan, multi-paned, double hung and symmetrically placed along the exterior facade.

The hexagonal tower is, along with the projecting metal tower above, the most distinguishing feature of the structure. It is characterized by its band of vertically oriented windows on each of the eight faces, as well as the iron railing which caps the flat-roofed tower from above.

The building's significance is due both to its history as the original Control Tower for the air station, as well as to its architectural design which once again exemplifies the sophisticated aspects of the original 1933 plan. The structure provides a transition between the more historically refined Spanish Colonial Revival architecture and the simple, yet equally impressive, more modern styles of the utilitarian outbuildings. It is the cohesion provided by the interaction between these two styles that provide the stylistic excellence of the historic core plan.

### TWIN SMALL TOWERS (FLOOR WATCHTOWERS): BUILDINGS #32 AND #33

These two twin sites (#32 and #33) consist of very small, two-storied towers that are distinguished by their very unusual design. They are towers that are distinguished by their very unusual design. They are very small structures (578 sq. ft., 14'x14'x25') that appear to be composed of a standard two-story rectangular tower with flat roof joined to a slightly smaller two-storied rounded tower with like flat roof that is capped with metal railing. The buildings are very simple in form. There are really no specific architectural embellishments. They exhibit all of the standard features of the utilitarian structures on the base without any ornament. Recessed, double-hung, multi-paned windows provide the major characteristic design feature which ties them into the surrounding historic core buildings. A prominent projecting stringcourse characteristically separates the two floors.

The significance of these two small utilitarian buildings is primarily in their unique function and form. They are very site specific and add a distinctive counterpoint to all of the rectangular shaped structures on the base. They are architectural curiosities that add immeasurably to the historic and architectural importance of the site.

# National Register of Historic Places Continuation Sheet

Section number7	Page14	
-----------------	--------	--

#### **INTERIOR SPACES:**

Naval Air Station Moffett Field has been in continuous use since it was constructed. During the years the interiors of the buildings were altered to accommodate changes in uses and space requirements. The alterations have redesigned the original interior space plans, removed the original surfaces and changed the spacial feeling of the interiors. Due to the alterations, the interiors do not retain architectural integrity or historic significance.

#### NON-CONTRIBUTING BUILDINGS

Within the boundary of the historic district the number of non-contributing buildings exceeds the number of significant buildings and structures. This unusual ratio does not diminish the significance or integrity of the district. Most of the non-contributing buildings were constructed after the period of significance and are primarily small utilitarian constructions. The Chapel and heating plant, buildings 86 & 87 were constructed after the period of significance yet are designed in the idiom of the district. Thus, Naval Air Station Moffett Field, despite the imbalance in numbers of contributing and non-contributing buildings, maintains exceptional integrity of the 1933 station plan and architectural design.

The International style buildings were predominately constructed after 1944 and are not 50 years old. Therefore, they are not eligible for listing at this time. The Post Office, building #67, constructed in 1943, one of the finest examples of this style, is not significant as an individual building and should be included with the later International style buildings.



## National Register of Historic Places Continuation Sheet

Section number7	_ <b>Pag</b> e	
-----------------	----------------	--

### SIGNIFICANT AND CONTRIBUTING BUILDINGS

BLDG.#	CURRENT USE	ORIGINAL USE
1 2 5 10	Hangar #1 Gymnasium Water Tank Heat Plant Building	Hangar #1 Balloon Hangar Water Tank Storehouse
15 16 17 18 19 20 21 22 23 24 25 26 32 33 37 A, A1 B, B1 C, D1 E, E1 F, F1 G, G1 H, H1 I, I1	PW Shop PW Shop CPWP Administration NAV RES Administration BEQ BOQ BOQ Detached Garage BOQ Detached Garage Instruction Building Administrative Office Building Base Theater/Recreation Service/Thrift Shop Gate House/Iron Fence Storage Storage Scale House Officers Housing and Garages	Fire Station/Laundry/Garage Locomotive Crane Shed Administrative Building Aereological Center BEQ/Brig BOQ/Mess Hall & Galley BOQ Detached Garage BOQ Detached Garage Dispensary E Ambulance Garage Bowling Alley/Recreation Building Gate House/Iron Fence Tank House Water Tower Scale House Housing and Garages
46 47 55	Hangar #2 Hangar #3 Heat Plant for Hangars #2 and 3	Hangar #2 Hangar #3 Heat Plant for Hangars #2 and #3
SIGNIFICANT	OBJECTS	
40	Flagstaff/Commons Memorial Anchor	Flagstaff and Commons Anchor

# National Register of Historic Places Continuation Sheet

Section	number	8	Page	2
Occion	iidiiiDO:		. ~5-	<del></del>

Several factors contributed to the commissioning of the U.S. Naval Air Station Sunnyvale on April 8, 1933. Of foremost importance was the vision for the future of aircraft and influence of Admiral William A. Moffett. Appointed by President Harding on July 25, 1924, to be the first as Chief of the Naval Bureau of Aeronautics, Admiral Moffett had already established himself the proponent for increased Naval aircraft as an integral component of the Navy's ability to control the seas off the coasts of the United States. In the 12 years that Admiral Moffett lead the bureau, the U.S. Navy was catapulted into the lasting interlocking strategy of Naval presence in the air as well as the sea. But he also spoke of the future in commercial aviation. In the 1920's, he appears fascinated with the lighter than air technology of the dirigibles. The success of the zeppelins in WWI contributed to the development of the larger dirigibles. This was however, marred by the disasters resulting from the flammability of the hydrogen used to fill the chambers. Each country involved in the hydrogen filled dirigibles experienced tragedy. A memorial plaque in Shenandoah Plaza at Moffett Field commemorates USS SHENANDOAH that was lost with a crew of 14 on September 3, 1925. The largest of the dirigibles, HINDENBERG, burst into flames over Lakehurst, New Jersey in 1937, culminating a series of tragic losses involving the dirigibles and hydrogen, Helium, produced only in Texas and Kansas, had been known to be a reasonable replacement for hydrogen, but was prevented from export by the 1925 Helium Export Act. Moffett began a lobbying campaign to have the U.S. Navy use helium filled dirigibles to patrol the coasts. In Moffett's plan, these giant rigid frame airships would provide the long range observation for the surface Navy below. He believed the dirigibles could be fashioned to carry small planes and might even be equipped with bombs. The idea was not far-fetched. The technology of the 1920's allowed dirigibles which could stay aloft for 14 days and fly 10,000 miles. The lobbying proved successful with the 1926 congressional authorization for two Naval dirigibles capable of carrying aircraft and a new aircraft base for the west coast. The dirigibles were to be built by the Goodyear-Zeppelin Corporation in Akron, Ohio. The first to be completed was based at Lakehurst, New Jersey. The selection of the site and construction of a base to service the second would be undertaken on the west coast.

The west coast site appeared to be slated for Camp Kerney near San Diego when the northern California politicians realized the opportunities to be created and forced the federal planners to accept applications from the entire west coast. Applications were received from 997 locations. San Francisco mayor, James Rolph, saw the benefit to the Bay Area even though his city did not have a site suitable for the base. The appeal was for 2,000 acres with unobstructed approaches, clean water, rail access and good flying weather was heard by Mrs. Laura Whipple, a recently established real estate broker from the East Bay. Familiar with the Sunnyvale area, she selected the Rancho Unigo, a former Indian Reservation, that seemed to meet all the criteria. Appointing herself "Chairman of the Landholders Commission", she obtained an option for 1,750 acres at the price of nearly \$500,000. She wired San Jose congressman, Joseph Free,that a perfect site for the dirigible base had been located and optioned. The proposal from San Diego offered free land; in order for the Sunnyvale site to be selected the same offer would have to be made. Under



## National Register of Historic Places Continuation Sheet

3	
---	--

the leadership of presidents of the Chambers of Commerce from Mt. View and San Jose, a campaign to raise the funds and solidify the offer went forward. The newspapers, including the San Jose Mercury Herald, were enthusiastically in support of the proposal and offered publicity and public relations material to support the proposal. After three years of study and debate, it was time for a decision. On December 28, 1930, the vote registered by the House Naval Affairs Committee for H.R. 6810, introduced by Congressman Free, selected Sunnyvale by 18 to 1 and Camp Kerney as the auxiliary base. As a member of the West Coast Naval Airship Base Board, Moffett had favored Sunnyvale while the Secretary of the Navy, Charles F. Adams, preferred Camp Kerney.

Once selected, the issue remained to raise the money to purchase the land. Under the leadership of A. M. Mortensen, President of the San Jose Chamber of Commerce, the funds were raised and on August 2, 1931, the Chamber's check for \$476,165,90 completed the purchase of 1000 acres of the Rancho Unigo. Also on August 2, 1931, the land was transferred to the U.S. Navy for \$1.00. This completed a long and arduous partnership between the cities of the Bay Area to gain the prestige, jobs and economic interests that would follow the base.

The budget for constructing the base was \$5,000,000. The U.S. Navy of Yards and Docks would be responsible for the design and coordinate the construction. Lt. Commander Earl Marshall was given the responsibility. Ernest Wolf, an experienced engineer from the Goodrich Zeppelin Corporation, was to be the Associate Engineer. Hangar #1, as it would be called, was the most important building and received the first attention. The design had been refined in Akron by Dr. Hugo Ekener, to form a rounded building that followed the form of the dirigible. Enormous curved doors on each end would slide over the building, rolling on 40 wheels over standard gauge railroad track, and propelled by 150 hp electric motors, thus minimizing the turbulence and problems encountered with past designs. In fact, it was the window patterns that dictated the north-south orientation and siting of Hangar #1; the rest of the base followed. Of the \$2,250,000 budgeted for the hangar, \$1,116,044 was awarded to the Wallace Bridge and Structural Steel Company of Seattle to fabricate the steel for the structure and doors. Seims-Heimers, Inc. of San Francisco bid \$398,937 for the roofing, windows and siding on the airdock that would measure 1, 133 feet long, 308 feet wide and 198 feet high. The floor area is just over eight acres. A structural space frame, the design and construction of this hangar remain a feat unparalleled in the engineering of enclosed space.

Railroad tracks ran through the hangar, culminating at the mooring tower. The tower secured the dirigible to the ground by mooring lines. This tower has been removed. The other large structure that was necessary for the dirigible was the helium tank that was located in front of the hangar.

The plan for the base and the design of the buildings was also undertaken by the Naval Bureau of Yards and Docks.

# National Register of Historic Places Continuation Sheet

Section number	8	Dogo	4
Section number	***************************************	Page	

The style for the buildings, Spanish Colonial Revival, is reflective of the popularity of the revival movement and the desire of the local politicians to have the base designed in the "California Style" of white stucco walled buildings with red tile roofs. The plan and building design was very formal, an axial orientation with the bemouth hangar to the east and the base extending west. Following the Spanish influence, a large plaza is the central element with the most ornately decorated building, the Administration Building, at the head of the plaza behind the flag pole and in front of the hangar. On the south side of the plaza were located the dispensary and Bachelor Officers' Quarters. To the north were the recreation building and the barracks. To the southwest on the cul-de-sac were located the nine officers' houses and garages. Extending to the east, and south, behind this formal plaza arrangement were the utilitarian buildings, fire station, garage, laundry boiler plant, locomotive and crane shed, shops, helium storage and water tower. To the north were the commissary, store house, gas station, balloon shed and storage buildings. Directly behind the Administration Building was the cafe (later the Officers' Club), and of course, the Hangar. The base was designed in anticipation of the importance of the automobile. Broad roads, large parking areas and garages were incorporated in the plan.

Landscaping was carefully planned to mature in harmony with the buildings and circulation elements. The area considered the Naval Air Station Sunnyvale Historic District maintain the integrity of the original design and represent one of the finest formal plans for a government facility in California. It was a forward-thinking plan with expansion to occur outside the formal plaza, thus the quality of design has been maintained. The original base is a one-of-a-kind facility in the Santa Clara Valley with great importance in the architectural heritage, facility planning and economic growth of the region.

The primary significance of the historic district is the association with the "lighter than air" dirigible program. The dirigibles, to be the eyes in the sky for the Navy, were in operation for a relatively short time. USS MACON, one of the two dirigibles constructed for the Navy, was christened by Mrs. William Adger Moffett (wife of Admiral Moffett) on March 11, 1933. An article about the landing in Sunnyvale was reported in the October 15, 1933 edition of the San Francisco Chronicle that read, "30,000 Thrilled as the MACON Moors at Home Station." The sister dirigible, AKRON, had been lost on April 13, 1933, making the MACON the last dirigible. For 16 months, USS MACON was a common sight over the Santa Clara Valley as it performed in a number of military maneuvers with the Pacific Fleet. Admiral Moffett had been well aware that the slow moving dirigibles could be of great benefit when assigned as an observatory for the fleet, but were vulnerable if used in maneuvers with the fleet. Shortly after arriving at Sunnyvale, USS MACON was deployed on tactical maneuvers with the Pacific Fleet. Equipped with an internal hangar and steel frame hoist termed a "trapeze", USS MACON carried four small fighter planes. The Sparrowhawks (F9C) were bi-plane fighters developed specifically to be carried in the dirigible by Curtis. Each weighed only 2,500 pounds with a pilot. As an airborne carrier, the dirigible was a hulking target that "failed to demonstrate military usefulness." according to the Commander in Chief of the United States Fleet, Admiral David Sellers. While returning from maneuvers with the fleet on February 12, 1935, USS MACON experienced a structural failure and crashed into the Pacific. Of the 83 crew, only 2 were lost. It was the headline in the San Francisco Chronicle the next day that told the story, "Dirigible Doomed as Defense Factor, Officials Say." The era of dirigibles was over, the only remaining element of the Moffett five year plan was Hangar #1 and the base at Sunnyvale.





# National Register of Historic Places Continuation Sheet

<u> 5</u>	Page	8	number	Section

During this period, the U.S. Army Air Corps operated a limited number of blimps in conjunction with observation exercises. In September, 1935, seven months after USS MACON went down, the Army assumed control of the base and Hangar #1. The facility was used by the Army for pursuit and observation activities until 1940 when it was converted to the West Coast Air Corps Training Facility. During this period, the dispensary was enlarged and barracks were added.

Shortly after the outbreak of WWII, the base was returned to the U.S. Navy. In April, 1942, the base was recommissioned Naval Air Station Moffett Field.

The return to Naval Command was to provide expanded facilities for small blimps and balloons used for coastal observation. Hangars #2 and #3 were constructed for blimps in 1942. They are included in the historic district because of the use as a lighter than air facility, and for their architectural/engineering importance.

One of the most recognizable landmarks in the San Francisco Bay Area, Hangar #1 and the original base are significant in the history of Naval Aviation, defense and in the development of the Santa Clara Valley. From the original base and because of the facility location and landing field, NASA Ames Research Center is located to the north adjacent to the original plaza boundary and at the north boundary of the historic district. It is far easier to measure the importance of the dirigible in Naval Aviation and defense history than it is to measure the enormous impact upon the growth of the defense and space industry in Northern California because of the original location of this base with the 1000+ acres.

The Naval Air Station Sunnyvale Historic District is recommended for listing in the National Register of Historic Places at the National Level of significance under Criteria A, as the only base designed specifically for the Navy to home port USS MACON, the only dirigible in the fleet, a significant contribution to the broad pattern of our history; and under Criteria C, a facility plan and architectural design that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

The landscape plan (Y&D drawing No. 115840) was approved on April 29, 1933. This plan shows the base in its entirety.

## National Register of Historic Places Continuation Sheet

Section number \_\_\_\_\_\_ Page \_\_\_\_\_ 2

ZONE 10	E	37.7063	122.0530
	A1	37.7095	122.0433
	B1	37.7060	122.0421
	C1	37.7071	122.0394
	D1	37.7105	122.0408



# State of California - The Resources Agency DEPARTMENT OF PARKS AND RECREATION OFFICE OF HISTORIC PRESERVATION

### HISTORIC RESOURCES INVENTORY

* 3 .	ITIFICATION AND LOCATION		•			Ser. No
	Historic name Non-contribu	ting build	ings(1940-1	944) v	within	National Register status Local designation
* 2.	Common or current name the NAS Moff	ett Field	Historic Di	<u>strict</u>	<u>ti.</u> [	
* 3.	Number & street Buildings: #64, #	67, #86, #	87	(	Cross-corric	dor
	City	***************************************	Vicinity only _	2	Zip	County
4.	UTM zone AParcel No	В	Other	_ c		D
			Otner			
	CRIPTION Property category		If district pur	abor of do	cumonted	for Gurden
<b>*</b> 7.	Briefly describe the present physical appearance architectural style.	e of the property,	including condition	n,boundar √di≕	ries, related	I features, surroundings, and (if appropriate)
These buildings represent a later group, located throughout the station and with these four examples in the area of the NAS Moffett Field Historic District, that is defined by distinctive architectural styles that reflect the most popular designs of the time.  Building #86 - Chapel and #87 Chapel Heat Pump, are executed in a slightly Mission Revival design that is an extension of the Spanish Colonial Revival architecture of the Historic District. Located between the Officers Housing Area and the central buildings of the 1933 base, the buildings are architecturally compatible with the 1933 Historic District.  Buildings #64 and #67 are examples of the International Style with the Post Office #67 a particularly fine example.						
	*Attach photo enve Put address and photo dat				9. C	Planning agency  Dwner & address  Type of ownership  Present use  Zoning

Send a copy of this form to: State Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94296-0001

<sup>\*</sup> Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.

8. Statement of Significance		
Certifying official has considered the significance of this prof	perty in relation to other properties: statewide locally	
் அக்கெble National Register Criteria 🗓 A 🔲 B 💢 C	D	
Criteria Considerations (Exceptions)	D E F G	
Areas of Significance (enter categories from instructions)  Military Engineering	Period of Significance 1930-1935 1942-1946	Significant Dates
	Cultural Affiliation	
Significant Person Moffett, William Adger; Admiral	Architect/Builder U.S. Navy Bureau of Yar	rds and Docks

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

In the nation's quest to provide security for the lengthy expanse of it's coastlines the opportunity for air reconnaissance was realized by the futuristic Admiral William A. Moffett. Through his efforts, two Naval Air Stations were commissioned in the early 1930's to port the two U.S. Naval Airships (dirigibles) he believed capable of this challenge. The Naval Air Station Sunnyvale was the Pacific Coast location selected, designed and developed to port USS MACON (ZRS 5). The immense structure, Hangar #1, designed to house USS MACON, with its larger counterpart in Akron, Ohio, remain the two largest structures in the United States without internal support. At the onset of WWII, the base was expanded with Hangars #2 and #3 which were designed to accommodate the smaller blimps and balloons used for reconnaissance, until the range of heavier than air aircraft (airplanes) was sufficient to patrol the coast. The significance of the U.S. Naval Air Station Sunnyvale Historic District is attributed to the association with the expanding defense capabilities of the U.S. Navy, the engineering technology found in lighter than air ships, the design of the hangar and system for porting the dirigible and in the plan and architectural style of the station designed to support this defense technology. The significance of Hangar #1, was recognized when it was designated a Naval Historical Monument. It has been designated a Califronia Historic Civil Engineering Landmark, by the San Francisco section, American Society of Civil Engineers, and has been determined eligible for listing in the National Register of Historic Places by the U.S. Navy in consultation with the California State Historic Preservation Officer. The entire historic district is supported for listing in the National Register of Historic Places at the national level of significance under Criterion A for the association with coastal defense and naval technology that has made a significant contribution to the broad patterns of our history; and Criterion C reflecting the distinctive type, period, method of construction and high artistic values that are represented in the 1933 station plan and buildings. In 1942, the

station was recommissioned, U. S. Naval Air Station, Moffett Field, in recognition of the significant contribution to naval history by Admiral Moffett, contributions that have gained him

the unofficial title, "Father of Naval Aviation."

9. Major Bibliographical References	
Gragg, Dan The Guide to Military Installation Payne, Stephen M., Santa Clara County: Harves	s, Harisburg, PA; Stackpole Books, 1983 t of Change, Santa Clara,CA;Windsor Publicati 1987
Unpublished:	
Histoirc Civil Engineering Landmarks of San F Annual Conference, American Society of Ci Sponsor, 1977.	rancisco and Northern California, 125th vil Engineers, San Francisco Section,
Ifft, Jerry. The Era of Dirigibles at Moffett King, Jr. Memorial Library, San Jose, CA	Field, 1987; California Room, Martin Luther
Interviews:	
Benjamin Mandweiler, NAS, Moffett Field, Publ Lt. Col. Robert N. Maupin, USAF. Ret.	
Provious desumentation on file (NDC):	See continuation sheet
Previous documentation on file (NPS):  preliminary determination of individual listing (36 CFR 67)  has been requested  previously listed in the National Register	Primary location of additional data:  State historic preservation office  Other State agency
previously determined eligible by the National Register designated a National Historic Landmark recorded by Historic American Buildings	X Federal agency Local government University
Survey # recorded by Historic American Engineering Record #	Other Specify repository:
10. Geographical Data	
Acreage of property 124 Acres (approximately)	
Zone Easting Northing	B 1 0 3 7 6 9 7 5 1 1 2 2 0 6 0 4  Zone Easting Northing D 1 0 3 7 7 0 6 3 1 1 2 2 0 5 3 0
	★ See continuation sheet
Verbal Boundary Description	
The Naval Air Station Sunnyvale includes all of the 19 the 22.5 acre detached area containing hangars #2 and Main Gate, including the entrance gate and fence, prowhere the boundary turns south to encircle the quarter Westcoat Road, east to Sayre Ave., north to Bushnell area is included in the historic district to incorporate halland around the pair.  Boundary Justification	d #3. The boundary line begins at the ceeds along Clark Road to Berry Road s A through H, north behind quarter F to Road and west to Clark Road. A detached
The boundary includes the limits of development in the 19 Sunnyvale, as prepared by the Navy Department, Bureau changars #2 and #3 that are associated with lighter than air	of Yards and Docks, and the area incorporating
11. Form Prepared By	
name/title Bonnie Bamburg	
organization <u>Urban Programmers</u>	date November 9, 1991
street & number1174 Lincoln Avenue city or townSan Jose	telephone 408-971-1421
ony or rowit 3dlf 102E	stateCalifornia zip code95125